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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,837

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Hitoshi Asahi

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4507

26646 7590 12/22/2010
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NEW YORK, NY 10004

EXAMINER

VELASQUEZ, VANESSA T

ART UNIT

PAPER NUMBER

1733

MAIL DATE

DELIVERY MODE

12/22/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/588,837

Applicant(s)

ASAHI ET AL.

Examiner

Vanessa Velasquez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 7-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 7-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No.(s)/Mail Date 3/12/2010
- 4) ☐ Interview Summary (PTO-413)
Paper No.(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/3/2010 has been entered.

Information Disclosure Statement

2. One (1) information disclosure statement (IDS) was submitted on 3/12/2010. The submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kashima et al. (JP 10-176239, Computer-Generated English Translation).

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Regarding claims 7, 8, and 10, Kashima et al. teach a steel sheet containing the following elements in percent by weight (abstract):

Element	Claim 7	Kashima et al.
C	0.03 - 0.30	0.02 - 0.12
Si	0.01 - 0.8	0.1 - 1.5
Mn	0.3 - 2.5	0 - 2.0
P	0 - 0.03	0 - 0.05
S	0 - 0.01	0 - 0.01
Al	0.001 - 0.1	0.01 - 0.10
N	0 - 0.01	Not taught
Fe & impurities	balance	balance

Kashima et al. do not teach the intentional addition of nitrogen; therefore, it will be regarded as being absent or present only at impurity levels, which lies within the claimed range. A *prima facie* case of obviousness exists when ranges disclosed in the prior art overlap those in the claims (MPEP § 2144.05); therefore, the claimed ranges do not constitute a patentable distinction over the prior art. The steel also comprises a two-phase (dual-phase) microstructure essentially consisting of 1-20 area percent martensite and the remainder ferrite (abstract; paragraph [0024]). Because the dual-phase structure essentially consists of martensite and ferrite, the two phases are adjacent to one another, thus satisfying the grain boundary configuration as claimed. The average size of the martensite grains is less than 10 μm (paragraph [0025]), which overlaps the claimed range. The steel sheet is formed into a pipe, and the small decrease in the yield strength of the steel after it has been formed into a pipe signifies a reduced Bauschinger effect (abstract; paragraphs [0005], [0025], [0035], [0036]; Tables 2 and 3, ΔYS column).

It is noted that the claimed invention, which is drawn to a product, recites process limitations of heating and quenching the pipe. Kashima et al. do not teach heating and quenching the pipe as claimed. However, it should be noted that the patentability of a product does not rest on its method of manufacture (MPEP § 2113). When the prior art discloses a product appearing to be identical or substantially identical to the claimed product, the burden falls on Applicant to show an unobvious difference.

Regarding claims 9 and 12, Kashima et al. do not teach that the Charpy V-notch value in the transverse direction at -20°C is at least 40 J and that the ratio of the proportional limit of the compression stress-strain curve in the circumferential direction before and after expansion of the steel pipe is 0.7 or more. It is well established, however, that when a material possesses a structure or composition that is identical or substantially identical to that of the claimed invention, any claimed properties or functions are presumed to be inherent (MPEP § 2112.01). Thus, in light of the overlapping chemical composition and microstructure, one of ordinary skill in the art would expect the steel of Kashima et al. to possess the same Charpy V-notch values and proportional limit ratios as that of the claimed invention.

Regarding claim 11, Kashima et al. teach that the steel sheet may optionally further contain the following elements, in percent by weight (abstract, para. [0009]):

Element	Claim 11	Kashima et al.
Nb	0 - 0.1	0 - 0.08
V	0 - 0.3	0 - 0.08
Mo	0 - 0.5	0.1 - 1.5 (Mo+Cr)
Ti	0 - 0.1	0 - 0.08
Cr	0 - 1.0	0.1 - 1.5 (Mo+Cr)
Ni	0 - 1.0	0 - 1.0
Cu	0 - 1.0	0 - 1.0

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B	0 - 0.003	Not taught
Ca	0 - 0.004	0 - 0.005

Kashima et al. do not teach the intentional addition of boron to the steel; therefore, boron will be regarded as being absent (i.e., zero percent by weight) in the steel sheet.

5. Claims 7-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kami et al. (JP 2003-096545, Computer-Generated English Translation).

Regarding claims 7-10 and 12, Kami et al. teach a tube (pipe) containing the following elements in percent by mass (abstract; paragraphs [Claim 1]):

Element	Claim 7	Kami et al.
C	0.03 - 0.30	0.10 - 0.30
Si	0.01 - 0.8	0.01 - 2.0
Mn	0.3 - 2.5	2.0 - 4.0
P	0 - 0.03	≤ 0.025
S	0 - 0.01	≤ 0.02
Al	0.001 - 0.1	0.010 - 0.10
N	0 - 0.01	≤ 0.010
Fe & impurities	balance	Balance

The microstructure of the steel consists primarily of ferrite and martensite (dual-phase) (paragraph [0008]; Table 2, third column from right side). The lamellar structure indicates that ferrite and martensite are adjacent to one another, thus satisfying the grain boundary configuration as claimed. After the steel is formed into a tube, it is heated to a two-phase alpha(ferrite)+gamma(austenite) region (e.g., 650-850°C) and subsequently cooled (quenched) (paragraphs [0013], [0016], [0030]).

Kami et al. do not explicitly teach a small occurrence of the Bauschinger effect, the grain size and area ratio of martensite, Charpy V-notch values, and proportional limit

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ratios as claimed. However, it is well established that when a material is possesses a structure or composition that is identical or substantially identical to that of the claimed invention and/or is produced by a method that is identical or substantially identical to that of the claimed invention, any claimed properties or functions are presumed to be inherent (MPEP § 2112.01). Kami et al. teach a steel with an overlapping chemical composition that is produced by the same claimed method (compare paragraphs [0013] and [0027]-[0030] with lines 18-28 of page 18 of the instant specification); therefore, one of ordinary skill in the art would expect the steel of Kami et al. to possess the same properties as those of the claimed invention.

Regarding claim 11, Kami et al. teach the optional inclusion of one or more of the following elements (paragraphs [Claim 5], [0009], [0010]):

Element	Claim 11	Kami et al.
Nb	0 - 0.1	0.1 or less
V	0 - 0.3	0.5 or less
Mo	0 - 0.5	1 or less
Ti	0 - 0.1	0.2 or less
Cr	0 - 1.0	2 or less
Ni	0 - 1.0	1 or less
Cu	0 - 1.0	1.5 or less
B	0 - 0.003	less than 0.005
Ca	0 - 0.004	less than 0.1

A *prima facie* case of obviousness exists when ranges disclosed in the prior art overlap those in the claims (MPEP § 2144.05); therefore, the claimed ranges do not constitute a patentable distinction over the prior art.

Response to Arguments

6. Applicant's arguments filed 8/3/2010 have been fully considered but they are not persuasive.

Applicant primarily asserts that the properties of the steels of Kashima differ significantly from the steels of the claimed invention and therefore the *prima facie* case of obviousness has been rebutted. Applicant has filed a declaration to illustrate the asserted difference by comparing the stress-strain diagrams of steels manufactured by methods of the instant invention and of Kashima. In response, the declaration has been carefully reviewed but its contents are not commensurate in scope with the claimed invention as stated in claim 7 (MPEP § 716.02(d)). Independent claim 7 recites that the Bauschinger effect is "small," but it does not provide a definition for what is considered small, which is a relative term. Without first establishing a standard as to what is "small," it is unclear how one would compare data to arrive at the conclusion that there is a significant difference between the claimed invention and the prior art. It is noted that dependent claims 9 and 12 at least define a proportional limit ratio, which is a measure of the Bauschinger effect. However, the declaration does not calculate the proportional limit ratios of the tested steels so that they can be compared with the claimed range and to each other. It is acknowledged that the declaration at (IV)(4) makes the conclusion that the Bauschinger effect in Fig. C is not small, but does so without providing a numerical comparison. The burden falls on Applicant to establish that the results are unexpected and significant (MPEP § 716.02(b)).

Acknowledgment of Declaration Under 37 CFR 1.132

7. The declaration under 37 CFR 1.132 filed 8/3/2010 is insufficient to overcome the rejection of claims 7-12 based upon Kashima et al. in view of Bates et al. as set forth in the last Office action for at least the following reasons:

The data in the declaration are not commensurate in scope with the claimed invention (MPEP § 716.02(d)). Independent claim 7 recites that the Bauschinger effect is “small,” but it does not provide a definition for what is considered small. Since “small” is a relative term, it would appear somewhat arbitrary for a person of ordinary skill to compare one result with another and conclude that one value is small while the other is not.

The declaration has not established that the results are significant (MPEP § 716.02(b)). Dependent claims 9 and 12 at least define a proportional limit ratio, which is a measure of the Bauschinger effect. The declaration, however, does not calculate the proportional limit ratios of the tested steels. The declaration at (IV)(4) instead makes the conclusion that the Bauschinger effect in Fig. C is not small. The absence of calculated proportional limit ratios does not enable proper comparisons among the data and between the data and the claimed invention.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vanessa Velasquez whose telephone number is 571-

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270-3587. The examiner can normally be reached on Monday-Friday 9:00 AM-6:00 PM ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King, can be reached at 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Vanessa Velasquez/
Examiner, Art Unit 1733
/Scott Kastler/
Primary Examiner, Art Unit 1733